



# **Tipp City, Ohio**

**Request for Proposals**

**Smart Grid Infrastructure**

**RFP Number:** AMI-01  
**Title:** Smart Grid Infrastructure  
**Using Agency:** Tipp City, Ohio  
**Issue Date:** September 11, 2009  
**Issuing Agency:** City of Tipp City  
Attention: Christy Butera  
260 South Garber Drive  
Tipp City, OH 45371

**IMPORTANT NOTE:** Indicate firm name and RFP Number on the front of each sealed proposal envelope or package. Proposals will be received until October 9, 2009 @ 2:00 PM Eastern Daylight Time. Proposals must contain the signature of a duly authorized officer or agent that is empowered with the right to bind the proposing firm.

All qualified proposals will be evaluated and a selection will be made based on the proposal that is deemed to be in the best interest of the City of Tipp City (City) all factors considered. City reserves the unqualified right to reject any or all offers if determined in its best interest.

SEND ALL PROPOSALS DIRECTLY TO THE ISSUING AGENCY ADDRESS SHOWN ABOVE.

All Inquiries: Neil Shaw  
Principal  
Uptown Services, LLC  
Phone 303-554-5854  
Email nshaw@uptownservices.com

## **I. General Conditions and Bidder Instructions**

Sealed proposals will be received by the City Manager of the City of Tipp City, Ohio, until October 9, 2009 @ 2:00 PM EDT and subject to all provisions contained in this RFP document. Specifications shall take precedence over the general conditions.

### **A. Project Background**

The City of Tipp City (City) is interested in deploying an integrated advanced metering infrastructure (AMI) system for their electric and water utilities. The City has completed an AMI feasibility study and plans to make certain upgrades to their existing electric and water metering systems over the next two to three years. Upgrades being considered include meter replacement only up to and including full electric and water AMI implementations. The scope of those upgrades will depend on the cost of the options proposed in response to this RFP process (RFP).

The City also intends to pursue funding for the electric AMI systems through the American Recovery and Reinvestment Act (ARRA) Smart Grid Investment Grant program (SGIG). The following schedule is based on the timeline for the second wave of SGIG applications.

### **B. Project Schedule**

The general schedule for the project is currently expected to be as follows:

- Issue RFP Document – September 11, 2009
- Proposals due – October 9, 2009
- Selection process completed – October 16, 2009
- City Council Approval – October 19, 2009
- Smart Grid Investment Grant Application Due – November 4, 2009
- System Implementation – First Quarter 2010

### **C. Notice of Intent to Submit a Proposal**

All further information related to this RFP will be sent to those parties that have submitted a notice of intent to submit a proposal. Interested respondents are required to email their notice of intent to submit, which must include applicable contact information and email address, to Neil Shaw at the address listed in the following section. Submitting a notice of intent to submit a proposal does not obligate any party to actually submit a proposal.

### **D. Questions**

Questions regarding this Bid should be directed to:

Neil Shaw  
Uptown Services, LLC  
Phone - (303) 554-5854  
Email – nshaw@uptownservices.com

All questions must be written and will receive a written response that will be sent to all interested respondents who have submitted a notice of intent to submit. Questions may be received and sent by email and will be accepted up to October 5, 2009 by 2:00 PM.

**E. Proposal Submission Requirements**

Send (4) hard copy and (1) soft copy (PDF) proposals (including all required attachments and completed forms) to the City representative according to the instructions provided on page one of this RFP Document. Upon timely receipt, all proposals become the property of the City. All proposals received after the time listed on page one of this RFP Document will be returned unopened to the respective Respondent.

**F. Authorized Signature**

Proposals must contain the signature of a duly authorized officer or agent that is empowered with the right to bind the proposing firm.

**G. Effective Period of Proposals**

All proposals and related pricing must be valid for a minimum period of 90 days following the RFP due date.

**H. Costs Associated with Preparing Response to RFP**

The City shall not be liable for any costs incurred by respondents in preparing, submitting or presenting responses to this RFP, or in satisfying and demonstrating respondent's qualifications and ability to meet the requirements listed in this RFP. The City shall not reimburse any costs incurred by respondents in anticipation of being awarded a contract under this RFP.

**I. Changes**

The City reserves the right to modify or change any information presented in this request as more information becomes available or as the technology strategy is developed further.

**J. Confidentiality**

The City will make every effort to hold Respondent information confidential. However, given the open nature of the public records laws in the State of Ohio, Respondents are discouraged from sending any information that they do not wish to have discovered as part of an open records request.

**K. Prime Contractor Responsibility**

Respondents have the option of subcontracting parts of the services that they propose. All proposals must include a description of any anticipated subcontracting arrangements, including, but not limited to, the name, address and qualifications of consultants and subcontractors. The Supplier shall cause all appropriate provisions of the contract with the City to be inserted in the ensuing subcontracts to ensure fulfillment of all contractual provisions by subcontractors.

**L. Licensing Requirements**

All applicable engineering plans must be stamped by a Professional Engineer licensed by the State of Ohio.

**M. Exceptions**

Any exceptions to the scope and/or requirements set forth in this RFP must be noted by the Respondent.

**N. Right to Reject**

The City Manager reserves the right to waive informalities, to reject any or all proposals, or to accept any proposal which may be deemed to be for the best interest of the City of Tipp City, Ohio.

**O. Selection**

All qualified proposals will be evaluated and a selection will be made based on which proposal is deemed to be in the best interest of the City, all factors considered. The City is not obligated to make future expenditures as a result of this selection process.

**P. Negotiations**

The City reserves the right to negotiate all elements of any proposal to ensure that the best possible consideration be afforded to all concerned.

**Q. Surety**

Each proposal must be accompanied by a bid bond, certified check or bank cashier's check, drawn on a solvent bank, payable to the City of Tipp City, Ohio in the amount of 10% of proposal, as a guarantee that if the proposal is accepted, a contract will be entered into. Bid Bonds, checks or cash will be returned to the unsuccessful respondents as soon as the contract is officially awarded by the City Council. The bid bond of the successful respondent will be retained until a contract is affected.

**R. Withdrawal of Bids**

No proposal shall be withdrawn within thirty (30) days after the RFP due date.

**S. Infringements and Indemnifications**

The respondent, if awarded an order or contract, agrees to protect, defend and save the City harmless against any demand for payment for the use of any patented material, process, article, or device that may enter into the manufacture, construction or form of the work covered by either order or contract and he further agrees to indemnify and save the City harmless from suits or actions of every nature and description brought against it for or on account of any injuries or damages received or sustained by a party or parties, by or from any of the acts of the contractor, his servants, or agents.

**T. Default Provisions**

In case of default by the respondent or contractor, the City of Tipp City may procure the articles or services from any other sources without further advertising and may hold the respondent or contractor responsible for any excess costs occasioned thereby.

**U. Pricing**

Where unit prices are requested and there is a discrepancy in the total amount of the proposal, the unit prices shall govern.

**V. Interpretation of the RFP Document**

If any person contemplating submitting a proposal is in doubt as to the true meaning of the plans and specifications, he may submit to the City Manager a written request for interpretation thereof. Any interpretation of the proposed specifications will be made only by addenda duly

issued, and a copy of such addenda will be mailed to each person receiving a set of specifications. The City Manager will not be responsible for any other explanations of the plans and specifications. Verbal explanations received from any City employee shall not be the basis for any deviations from the specifications.

### **W. Taxes**

The City is generally exempt from Federal Excise and Ohio State Sales Taxes. Prices shall not include taxes. If taxes of any kind are applicable, they shall be listed separately. Exemption forms, when required, will be executed by the City.

### **X. Specifications**

Unless otherwise stated by the respondent, the Proposal will be considered as being in strict accordance with the specifications outlined in the RFP Document.

Reference to a particular trade name, manufacturer's catalog or model number are made for descriptive purposes to guide the respondent in interpreting the requirements of the City. They should not be construed as excluding proposals on other types of materials, equipment and supplies. However, the respondent, if awarded a contract, will be required to furnish the particular item referred to in the specifications or description unless a departure or substitute is clearly noted and described in the proposal.

### **Y. Delivery**

All items shall be quoted FOB Tipp City, Ohio.

### **Z. Inspection**

The City Manager or his representative will inspect all equipment prior to final acceptance.

## **II. Content of Proposals**

All proposals shall include as a minimum the following information.

- A. Name and address of firm
- B. Name and telephone number of contact person
- C. Names and addresses of all partners, officers, and directors and any other person with an ownership interest greater than 5%.
- D. Names and vitae of all professionals who will be assigned to work on the project including any registrations and numbers.
- E. List of similar projects including brief project description, location, number of units deployed by type, date, name of owner, and name of owner's representative for which services were provided during the last three years. Identify projects as completed or underway.
- F. Company information should also include disclosures of any bankruptcy or liens placed against the respondents within the last five years. Additionally, information should be

included on whether the company is Cash Flow Positive and, if not; a brief discussion on the adequacy of existing funding to reach positive cash flow should be included. If privately funded, list acquired financing including but not limited to:

- The number of financing rounds attained to date;
- Investors of each round and contribution;
- Description of any plans to acquire future financing.

- G. Description of the general and specific skills which the firm has available and which will be applied to the project.
- H. Description of reference architecture for the proposed electric and water metering system including detailed specification documentation for each system component to be provided under the terms of the given proposal.
- I. Point by point response to the requirements and questions listed in Section V.A. and/or Section V.B. of this RFP Document.
- J. Detailed cost proposal that clearly identifies the cost of all required hardware, software and services for the proposed smart grid system. Proposals must include all required hardware, software, back office systems, integration services, meter installation services, system component installation services, training and ongoing support to be responsive to this RFP. **The City expects to receive turnkey proposals for the implementation of the recommended system and its various components.**
- K. If a joint venture Proposal, provide the above information for all parties to the joint venture.
- L. List other information which will document the Respondent's capabilities and qualifications for the project.
- M. The following completed forms (attached to this RFP):
- a. Attachment A - Homeland Security Form
  - b. Attachment B - Release of Liens
  - c. Attachment C – Delinquent Tax Affidavit

### **III. Utility System Overview**

#### **A. General City Characteristics**

Tipp City is located in Miami County in the state of Ohio. As of July 2008, the City had a population of 9,254 and a median household income of \$55,367. The total land area for the City is 6.18 miles with a population density of 1,498 people per square mile. The City provides electric and water services inside and outside the City limits of Tipp City. They currently serve approximately 4,865 electric customers and 4,073 water customers. The City has also installed a fiber optic network for municipal and utility applications. This fiber network has some excess capacity that could be used to support smart grid backhaul requirements in certain portions the

utility service area. Finally, the City will have up to two water towers that could serve as antenna sites for any future smart grid system.

## **B. Asset Inventory**

### **1. Electric Meters**

The following tables provide a summary of the electric meters by account type and meter specifications:

| <b>Account Description</b>          | <b>Accounts</b> |
|-------------------------------------|-----------------|
| Single Phase Residential            | 4,329           |
| Single Phase - Commercial           | 332             |
| Poly Phase Commercial               | 188             |
| Single Phase - Security Lights Only | 16              |
| Single Phase - Street Lights        | 25              |
| <b>Total Meters</b>                 | <b>4,865</b>    |

Table 1.0 – Electric Meters by Account Type

| <b>Electric Meter Category</b> | <b>Meter Specifications</b>  |
|--------------------------------|--|
| Top Single Phase Meters        | <ol style="list-style-type: none"> <li>1. ITRON CLASS 200, 240 VOLT, 3 WIRE, TYPE = C1S (BASIC RESIDENTIAL). FORM 2S</li> <li>2. ITRON CLASS 320, 240 VOLT, 3 WIRE, TYPE = C1S (320 AMP RESIDENTIAL), FORM 2S</li> <li>3. SCHLUMBERGER, CLASS 20, 240 VOLT, 2 WIRE TYPE = C1SD (400 AMP RESIDENTIAL)</li> <li>4. SCHLUMBERGER, CLASS 20, 240 VOLT, 3 WIRE TYPE = C1S (400 AMP RESIDENTIAL)</li> </ol>    |
| Top Poly Phase Meters          | <ol style="list-style-type: none"> <li>1. ITRON CLASS 200, 120-480 VOLT 4 WIRE, (Y/D), TYPE SS4S1D, FORM 16S (14,15,17) (200 AMP METER)</li> <li>2. ITRON CLASS 20, 120-480 VOLT 4 WIRE, (Y/D), TYPE SS4S1D, FORM 9S (8S) (TRANSFORMER RATED METER W/DEMAND)</li> <li>3. ITRON CLASS 20, 120-480 VOLT, 4 WIRE (Y/D) TYPE SS4S2D, FM 9S (8S) (TRANSFORMER RATED METER W/DEMAND &amp; REACTIVE)</li> </ol> |

Table 2.0 – Primary Electric Meter Specifications by Category

## 2. Water Meters

The following table provides a summary of the water meters by size:

| Water Meter Size    | Count        |
|---------------------|--------------|
| 3/4"                | 3,516        |
| 1"                  | 449          |
| 1.5"                | 49           |
| 2"                  | 37           |
| 3"                  | 10           |
| 4"                  | 10           |
| 6"                  | 2            |
| <b>Total Meters</b> | <b>4,073</b> |

Table 3.0 – Water Meters by Size

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It should be assumed that all but 200 of the City's water meters are located in a basement, crawl space, closet, equipment room and/or vault. Approximately 200 meters are located in pits.

Please see Attachment D – Tipp City Meter Locations for a map showing the approximate locations of all electric and water meters operated by the City.

## 3. Fiber Network and Water Tower Locations

Please see Attachment E – Tipp City Fiber for a map showing the location of all existing and planned fiber cable routes and water tower locations that could be used for the purpose of AMI backhaul points of interconnection. The existing water tower (#2) will be connected with fiber and available for mounting of antenna assets starting April 2010. The new water tower (#3) will not be available for mounting of antenna assets until July 2011.

## 4. Back Office Systems

Tipp City uses Creative MicroSystems, Inc. (CMI) UTYX Client Server software for utility billing. The version used currently is UtyX version 8.0.2. CMI's website is [www.civiacmi.com](http://www.civiacmi.com).

Currently Tipp City's meter readers use Sensus AR4001 handhelds to obtain monthly meter readings. The readings from the handhelds are then downloaded into AutoRead for Windows – Version 5.05. A file is then created and uploaded into CMI's software. Tipp City then runs reports from the CMI software to look for stopped meters, misreads and/or leaks.

#### **IV. Project Scope and Requirements**

The scope of this RFP includes ALL hardware, software, installation services, integration services and ongoing support required to implement the electric and water metering components and applications being considered by the City. The City prefers to receive turnkey proposals in response to this RFP.

##### **A. Project Scope Alternatives**

The City's primary goal related to this project is to implement a full electric and water AMI capabilities over the next two to three years. However, given the possibility that the cost of a full deployment may be more than the City's budget will allow, the City is also considering the possibility of an alternative plan that would address the need for new electric and water meters, but not get them all the way to a new AMI network. The two approaches that the City is considering for this project are outlined next:

##### **1. Full Electric and Water AMI - Primary**

Under this approach, the City would replace all electric and water meters with AMI capable devices that would be connected over a common two-way backhaul network to the City's utility operations center. This deployment would be for the purpose of carrying out meter reading operations in the near term with the possibility for more advanced energy management and utility operations applications in the future (e.g. outage detection/management, customer energy portal, direct load control, demand side management, etc.).

##### **2. Walk-By Water AMR with AMI Ready Electric Meters - Alternate**

Under this approach, the City would deploy all new water meters that would be equipped with a walk-by radio read AMR system. The City would also deploy new "AMI ready" electric meters that would be capable of accepting an AMI module in the future. The current meter reading work force would use hand held radio readers to read the water meters and to enter visual electric reads for all new electric meters. This approach would allow for the replacement of water meters AND the installation of a radio AMR/AMI system in one visit to each customer location. The City will only consider water AMR systems that have a proven track record of integration with an existing electric AMI system. The added advantage of this approach would a more accurate and reliable electric metering infrastructure that could be upgraded to two way AMI with the additional of a plug-in module in the future. The City will only consider this approach if the full AMI alternative is not within existing budget constraints or it believes that the proposals for a full AMI system do not meet the long term needs of the electric and water utilities.

## **V. System Requirements**

Respondents must verify or explain how their proposed solution(s) will meet the requirements related to the given deployment scenario. Respondents are required to address the requirements listed for each deployment scenario for which they are providing a proposal (Full AMI and/or Walk-By Water AMR with AMI Ready Electric Meters). Please provide all responses immediately following each question or requirement in the following sections.

### **A. Full Electric and Water AMI**

Respondents with proposals for a complete electric and water AMI system are required to respond to all questions and requirements in the following sections (1 – 5).

#### **1. Electric AMI Requirements**

The following requirements and questions are related to the deployment of AMI capability for all electric meters:

- Provide list of supported electric meters as of the proposal submittal date;
- Specify the physical AMI implementation approach for each supported meter (i.e. stand alone circuit board under glass, integrated module on meter main circuit board, meter socket adapter, etc.);
- Specify configuration options available to support remote disconnect of electric service;
- Describe how the proposed hardware and systems are used by City staff to complete each disconnect and reconnect of electric service;
- The City may wish to deploy load control relays, in home displays (IHDs), programmable communicating thermostats (PCTs) and other devices at customer locations in the future. Zigbee (IEEE 802.15.4 compliant) is one possible approach that City is considering for communicating with these devices from the new AMI system. Discuss the proposed approach for Zigbee integration at each customer location for the purpose of supporting two way communications with the aforementioned devices;
- Specify all applicable wireless interfaces used by AMI capable meter or interface module including applicable standards, effective throughput, frequency usage, RF power and encryption;
- Specify planning assumptions for wireless range from AMI meter to in home devices (basement and main floor), AMI meter to collector and AMI meter to AMI meter;
- Specify temperature rating for AMI meter components being proposed;
- Specify input powering requirements and power consumption;
- Specify minimum interval period supported (i.e. 60 minute, 30 minute, 15 minute or less);
- Specify memory limits for the proposed solution (i.e. 100 days of 15 minute interval readings);
- Specify all functionality offered by the proposed AMI meter solution including but not limited to scheduled and on-demand meter reading, event logging, remote meter programming, demand and load profile recording, power quality monitoring, tamper detection, meter registration, data encryption, over the air firmware upgrades, time of use data retrieval, demand resets and compliance with ANSI standards C12.19 and C12.22 for data storage and network data acquisition and routing;
- Specify support system capabilities provided and describe the process of configuring, administering, monitoring and managing AMI meters provided as part of this system;
- Describe how the proposed system will support the current billing process being used by the City including the file exchange between the AMI system and the CMI billing system;

- Identify any support systems required to manage AMI meters that ARE NOT provided in the Respondent's proposal;
- Describe the typical process that City staff would follow to configure the proposed AMI meter before and after it has been installed at the customer location;
- Devices must support remote firmware upgrades over the network;
- AMI meters and/or modules must support automatic clock synchronization with the host software with no more than one minute of drift allowed at any time;
- Include discussion of any applicable product roadmap plans for this component of the proposed AMI solution.

## 2. Water AMI Requirements

The following requirements and questions are related to the deployment of AMI capability for all water meters:

- Provide list of supported water meters as of the proposal submittal date;
- Specify the physical AMI implementation approach/options for each supported meter/register/encoder;
- Specify the battery life and any applicable warranty for the proposed solution;
- Describe the process that City personnel would follow for dead batteries in the water AMI system (battery replacement vs. AMI unit replacement);
- Specify all applicable wireless interfaces used by water AMI system including applicable wireless standards, effective throughput, frequency usage, RF power and encryption;
- Describe the process used by the water AMI system to send information from the water meter to the City's back office systems; Include a discussion of how other metering end points are utilized, the type of wireless communication used (mesh vs. point to point), how information is stored at each meter and intermediate points in the backhaul network, the ability to complete on demand reads and the process of detecting leaks.
- Specify planning assumptions for wireless range from AMI equipped water meter to any other device that it is capable of communicating with it (water meters, electric meters and/or AMI collectors);
- Specify temperature rating for AMI meter components being proposed;
- Specify input powering requirements and power consumption;
- Specify minimum interval period supported (i.e. 60 minute, 30 minute, 15 minute or less);
- Specify memory limits for the proposed solution (i.e. 100 days of 15 minute interval readings);
- Specify the added capabilities offered by the proposed water AMI system that would be of interest to the City (e.g. leak detection).
- Specify support system capabilities provided and describe the process of configuring, administering, monitoring and managing AMI meters provided as part of this system;
- Describe how the proposed system will support the current billing process being used by the City including the file exchange between the AMI system and the CMI billing system;
- Identify any support systems required to manage AMI meters that ARE NOT provided in the Respondent's proposal;
- Describe the typical process that City staff would follow to configure the proposed AMI meter before and after it has been installed at the customer location;

- Devices must support remote firmware upgrades over the network;
- AMI meters and/or modules must support automatic clock synchronization with the host software with no more than one minute of drift allowed at any time;
- Include discussion of any applicable product roadmap plans for this component of the proposed AMI solution.

### 3. AMI Backhaul Network Requirements

The City understands that there are a number of different backhaul approaches in use for AMI systems. While the City is open to the optimal approach based on cost and performance, any system that offers the capability to increase the bandwidth available per meter over time will be favored in the evaluation process. For example, as the City continues to expand the fiber backbone in the future, they will be able to provide more high capacity backhaul points in the network. At that point they will want the ability to place more AMI backhaul interconnect points (e.g. collectors) than what will be deployed initially. The introduction of these additional collectors in the network will provide more bandwidth to support future smart grid and AMI applications that will require much more bandwidth than what the City requires today.

For the purposes of this project, Respondents should assume that they will have access to mount antennas on one or both of the City's water towers if required. Respondents should also assume that they will be able to use up to two fibers on the City's fiber system to create a wide area network (WAN) to connect AMI backhaul interconnect equipment. The City understands that the initial backhaul system will be primarily comprised of wireless with limited wired connections.

The following requirements and questions are related to the proposed AMI backhaul solution:

- Specify all applicable configuration options (stand alone, "under glass" and /or meter collar based) for the backhaul components in the proposed AMI system;
- Specify interfaces offered at each backhaul network element. The City requires at least one 10/100 Base t interface at each WAN interconnect point;
- Specify all applicable wireless interfaces used by backhaul network elements including applicable standards, effective throughput, frequency usage, RF power and encryption;
- Specify planning assumptions for wireless range from the backhaul system to all system end points including electric meters, water meters and any in-home devices such as IHDs, PCTs or load control relays
- Specify temperature rating for all applicable backhaul network element configurations including stand alone, "under glass" and /or meter collar based;
- Specify effective bandwidth per meter available with proposed solution;
- Specify the recommended upgrade strategy and associated cost to increase the effective bandwidth meter per meter (e.g. addition of more WAN interconnect points);
- Specify input powering requirements and power consumption;
- Specify the maximum number of devices (meters, relays, PCTs, etc.) that each WAN interconnect and all subtending collectors are capable of supporting based on the need to process either 15 minute, 60 minute or 24 hour interval data from each customer location. Detail the assumptions used to derive each ratio;

- Specify support system capabilities provided and describe the process of configuring, administering, monitoring and managing these systems;
- Describe the proposed integration with the City's existing billing platform. Pricing proposals are required to include this integration effort;
- Identify any support systems required to manage these devices that ARE NOT provided in the Respondent's proposal;
- Describe the typical process that City staff would follow to configure the proposed backhaul network elements before and after they have been installed in the network;
- Devices must support remote firmware upgrades over the network;
- Include discussion of any applicable product roadmap plans for this component of the proposed smart grid solution.

#### **4. Future Requirements**

Respondents are encouraged to provide feature and functionality information related to product offerings and solutions that could be used to meet the following future requirements for the City AMI (smart grid) system:

- Advanced Energy Management applications such as web presentment of customer energy usage via a personalized energy portal;
- Programmable Communicating Thermostat;
- Direct Load Control via smart 30A relay;
- Distribution automation applications including switch and capacitor back controls;
- Grid monitoring, outage detection and outage management such that the City may monitor the overall transmission quality and continuity of the grid and provide electronic reporting of degradation, interruptions and failures that may be discovered;
- Other advanced home area network applications like light switch controls, advanced appliance monitoring and controls, and integration of renewable energy sources.

#### **5. Smart Grid Investment Grant Provisions**

The City intends to proceed with an application to the SGIG program for the second round (November 4, 2009). The City will expect the successful respondent to collaborate on certain sections of the application in an effort to increase the chances of success. Information that will need to be provided by the successful respondent is discussed next.

##### ***a) Interoperability and Cyber Security***

The City will be required to include a section on the technical approach to addressing interoperability with respect to the integration of smart grid devices covering the application of procedures and practices involving interface identification, specification, testing, and lifecycle management in the SGIGP application. Respondents should describe their technical approach to addressing interoperability including:

- A summary of the information exchange interfaces for communicating automation devices and systems (i.e., their points of connection with other elements of the system).

- A summary of how the proposed solution will provide openly available and proprietary aspects of the interface specifications, and how existing (legacy) communicating devices or systems will be integrated into the project.
- A summary of how the proposed solution will address response to failure and device upgrade scenarios, such that overall system impact is mitigated.
- A summary of how the proposed solution will support compatibility with NIST's emerging smart grid framework for standards and protocols.

The City will also be required to include a section on the technical approach to cyber security. Per the DOE, cyber security should be addressed in every phase of the engineering lifecycle of the project, including design and procurement, installation and commissioning, and the ability to provide ongoing maintenance and support. Cyber security solutions should be comprehensive and capable of being extended or upgraded in response to changes to the threat or technological environment. Respondents should describe their technical approach to cyber security for the proposed solution including:

- A summary of the cyber security risks and how they will be mitigated at each stage of the solution's lifecycle (focusing on vulnerabilities and impact).
- A summary of the relevant cyber security standards and/or best practices that will be followed.
- A summary of how the proposed solution will support emerging smart grid cyber security standards.

#### **b) Buy American Requirement**

The City has interpreted the Buy American provisions in the SGIG as applying to the components of the new electric AMI system. Given the waiver applied by the Department of Commerce for telecommunications equipment, it would appear that the provision does not just apply to low tech manufactured goods like nuts, bolts and steel beams. Therefore, regardless of the respondent's interpretation of the provision, each respondent is required to specify the level of American involvement in the manufacturing and final assembly of each component of the proposed solution. The actual text of the provision is provided next:

*SEC. 1605. USE OF AMERICAN IRON, STEEL AND MANUFACTURED GOODS.*

*(a) None of the funds appropriated or otherwise made available by this Act may be used for a project for the construction, alteration, maintenance or repair of a public building or public work unless all of the iron, steel and manufactured goods used in the project are produced in the United States.*

*(b) Subsection (a) shall not apply in any case or category of cases in which the head of the federal department or agency involved finds that--*

*(1) applying subsection (a) would be inconsistent with the public interest;*

*(2) iron, steel and the relevant manufactured goods are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;*  
*or*

*(3) inclusion of iron, steel and manufactured goods produced in the United States will increase the cost of the overall project by more than 25%.*

*(c) If the head of a federal department or agency determines that it is necessary to waive the application of subsection (a) based on a finding under subsection (b), the head of the department or agency shall publish in the Federal Register a detailed written justification as to why the provision is being waived.*

*(d) This section shall be applied in a manner consistent with United States obligations under international agreements.*

## **6. Project Services**

The following requirements and questions are related to the services to be provided by the successful respondent:

- Describe the project management approach to be employed for the proposed project;
- Describe the process to be used for water meter replacements and AMI installations at the customer location. The successful respondent will be responsible for scheduling all installation activity directly with the customer;
- Describe the process to be used for electric meter replacements at the customer location, assuming that the successful respondent will be responsible for notifying all customers before any power interruptions;
- Describe the process for installation of all backhaul network elements required for the proposed system;
- Describe the process for testing the new AMI system for the first set of meters and as meters are added over the course of the following months;
- Describe the process for completing the required integration between the new AMI system and the City's billing system;
- Describe the quality control methods and procedures to be employed at all levels of the project;
- Describe training to be provided and timing for that training;
- Provide a preliminary schedule for the turnkey project based on a start date of 1/1/2010.

### **B. Walk-By Water AMR with AMI Ready Electric Meters**

Respondents with proposals for a AMI ready electric meters and a walk-by water AMR system are required to respond to all questions and requirements in the following sections (1 – 5).

#### **1. AMI Ready Electric Meters**

The following requirements and questions are related to the deployment of AMI ready electric meters:

- What makes and models of electric meters are being proposed?
- With which two way AMI systems have the proposed electric meters been successfully integrated?
- Do these meters accept the installation of a new AMI module as a field upgrade, or is a new meter required to upgrade to AMI?
- Provide all applicable specifications for the proposed electric meters;

- Describe the process to be followed by installation personnel for installing these new meters at an existing customer location.

## **2. Walk-By Water AMR Requirements**

The following requirements and questions are related to the deployment of AMI ready electric meters:

- What makes and models of water meters are being proposed?
- With which two way AMI systems has the proposed water AMR system been successfully integrated?
- Provide all applicable specifications for the proposed water meters and walk-by AMR system;
- Describe the process to be followed by installation personnel for installing these new meters at an existing customer location;
- Describe the proposed hand held radio read system and its capabilities;
- Describe the process for integrating with the existing City billing system.

## **3. Project Services**

The following requirements and questions are related to the services to be provided by the successful respondent:

- Describe the project management approach to be employed for the proposed project;
- Describe the process to be used for water meter replacements and AMR installations at the customer location, assuming that the successful respondent will be responsible for scheduling all installation activity directly with the customer;
- Describe the process to be used for electric meter replacements at the customer location, assuming that the successful respondent will be responsible for notifying all customers before any power interruptions;
- Describe the process for completing the required integration between the new AMR / hand held system and the City's billing system;
- Describe the quality control methods and procedures to be employed at all levels of the project;
- Describe training to be provided and timing for that training;
- Provide a preliminary schedule for the turnkey project based on a start date of 1/1/2010.